Little River Adaptive Management Area

Adaptive Management Areas have the overall objective of learning to manage on an ecosystem basis - both technically and socially.

April, 2001

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managing to learn and learning to manage

Little River ADAPTIVE MANAGEMENT AREA

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Cavitt Creek Restoration

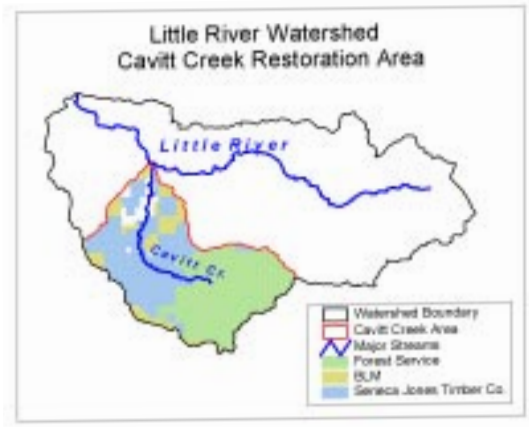
An analysis of the Little River watershed was completed in 1995. Cavitt Creek, the largest tributary to Little River, received the highest priority for restoration work within the watershed.

Cavitt Creek

Little River and Cavitt Creek have also been placed on the Oregon 303(d) list for violations of water quality standards for non-point source pollution. High sediment inputs and disruption to hydrologic processes from the road system are major problems. A water quality restoration plan has been completed for federal lands in the watershed. Road-related restoration was identified as the top priority. This includes treatments to reduce erosion risks from road surfaces, slopes, and stream crossings.

In 1997 the major landholders in the Cavitt Creek area (BLM, USFS, and Seneca Jones Timber Company, along with the Umpqua Basin Watershed Council) initiated a project to inventory and prioritize road-related risks. This type of cooperative relationship more effectively addresses water quality and fisheries concerns in areas with intermingled private and public lands.

Partners have contributed $25,000 to accomplish the road inventory

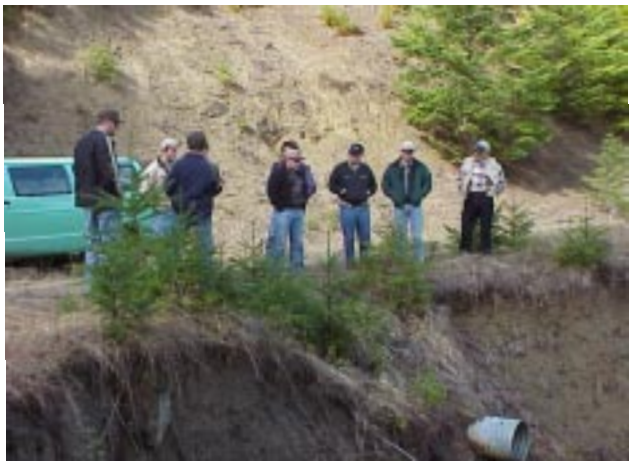


for purposes of assessing conditions and prioritizing restoration work. A total of 204 miles of roads were surveyed.

It is possible to substantially reduce road erosion by targeting those sections with the greatest sediment production.

Example of unstable road fill that could lead to a landslide.

The data collected through the road inventory is being used to target and prioritize the roads at highest risk to aquatic resources. A team of federal agency scientists and engineers are working together with the Umpqua Basin Watershed Council and Seneca Jones Timber Company personnel to review these sites and develop proposed treatments.



The team reviews a potential restoration site.

Funding for restoration will be secured from multiple sources. Potential sources include: agency appropriations, Jobs In The Woods program, Oregon Watershed Enhancement Board grant, Department of Environmental Quality (319) grant, work in kind, Secure Rural Schools-County Self Determination Act of 2000 (Title II funds), and other private or public grants as appropriate.

The Little River AMA web page has been moved to:

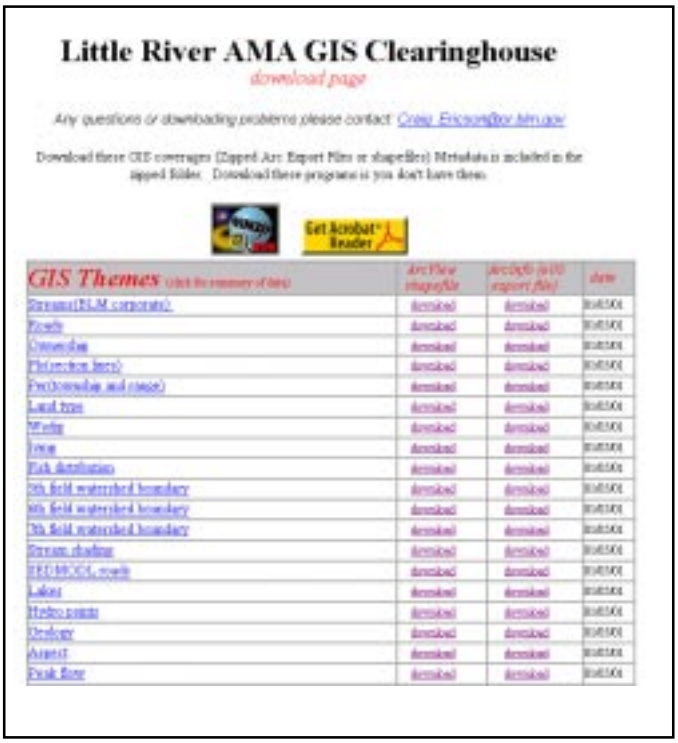
www.or.blm.gov/roseburg/littleriverama

AMA Data Project

The Little River AMA has implemented a shared BLM/ USFS AMA database. The goal is to provide a single location with easy access to AMA spatial data. This data consists of information such as streams, roads, geology, ownership, and recreation sites.

Some seamless data layers for the AMA are included and maintained. This means that rather than separate data layers for the USFS and BLM, there will be a single layer. For example, there will be a single roads layer containing all BLM and USFS roads.

The project also includes metadata (descriptive information about how the data was collected) for all layers.



All downloadable zipped (WinZip) files contain the GIS dataset and complete metadata. The user has the option to download ArcView shapefiles or ArcInfo coverages. Files are accessed from the Little River AMA web site.

National Public Lands Day (NPLD) was held on September 23, 2000. This is a nationwide event when volunteers "give something back" to America's public lands. Roseburg BLM and Tiller Ranger District sponsored numerous volunteer projects including one in the AMA. The Community Trail Volunteers assisted in maintenance activities at Emile campground. They worked on trails, painted outhouses, and picked up trash. Thanks to this energetic group for their fine work.

Sugar Pine Restoration Project

The purpose of this project is to study ways to restore populations of sugar pine (*Pinus labertiana*) and Western white pine (*Pinus monicola*) that are declining in southwest Oregon. Mountain pine beetle is responsible for much mortality in older trees but it is white pine blister rust that kills seedling, sapling, and pole size individuals.

There are two parts to this project. The first is to evaluate techniques for establishing and maintaining sugar pine in existing plantations where white pine blister rust is operative. The planting of more than 3,800 seedlings was completed in February, 2000. The next step is to prune a portion of these young trees. This is scheduled to occur within the next year. The first round of monitoring will also occur soon.

Debbie Anderson of the Umpqua National Forest plants a pine seedling in a clearing created in a Douglas-fir plantation.

The second part of the project is the Wolf Pine Timber Sale. The purpose of this study is to develop and test methods of thinning around live sugar pine trees (variable radius) to lessen competition and stress on sugar pine populations. Harvest treatments were completed in December, 2000. A crew will work this year to clear vegetation within the circle around the study pine trees.

Virtual Library

The Adaptive Management Area Network in the Pacific Northwest just began a three-year project to develop a virtual library system intended for use across the Network. The purpose is to make adaptive management and forestry-related information from multiple sources easily accessible using internet technology. This library will allow users to annotate observations and those annotations will be recorded and visible to future users.

The site will contain articles, public documents, research reports, and links to related sources of information. An important feature of the project is the development of a robust keyword list to facilitate searches for information.

This project is funded by the National Science Foundation, the US Forest Service, the Park Service and the Bureau of Land Management. This Research, Development and Applications effort is a cooperative venture between the AMA network, the Oregon Graduate Institute (a graduate school in computer sciences), and Eric Landis, a consultant who first championed these ideas.

For more information, see the Adaptive Management Area Network homepage for a slide show and a copy of the research proposal.

Water Quality

The 1972 Clean Water Act requires the listing of streams, rivers, lakes and estuaries that do not meet water quality standards. States must submit a list of these “water quality limited” waters to the Environmental Protection Agency (EPA) every two years.

The Department of Environmental Quality (DEQ) is the state agency responsible for protecting Oregon’s public water for a wide range of uses. DEQ sets water quality standards to protect “beneficial uses” such as recreation, fish habitat, drinking water supplies, and aesthetics.

When controlling pollution from non-point sources, several factors combine to form a comprehensive approach. This approach focuses on watershed plans developed locally.

The process works like this:

- Management plans to restore streams and rivers to water quality standards are developed by government agencies in cooperation with landowners.

- If the land is agricultural, then the Oregon Department of Agriculture works with the landowners in the watershed to devise and implement a management plan (a Senate Bill 1010 plan). If the land is private or state forest, then the Oregon Department of Forestry implements the Forest Practices Act.

- Federal agencies (such as Forest Service or the Bureau of Land Management) have a responsibility to develop watershed management plans on federal lands.

- In urban and rural areas not covered by other state or federal agencies, cities and counties develop management plans working closely with local watershed councils.

- The above plans are sent to DEQ for inclusion in an overall watershed plan - which DEQ would then submit to EPA for approval.

Little River and many of its tributaries have been placed on the 1998 Oregon 303(d) list for violations of water quality standards for the non-point source pollutants of temperature, sediment, pH, and habitat modification.

A joint water quality restoration plan was recently completed by the Umpqua National Forest and Roseburg BLM and submitted to Oregon DEQ. A copy may be viewed at the Little River AMA web site.

The next step is for DEQ to complete Total Maximum Daily Loads (TMDLs) and an overall Water Quality Management Plan (WQMP) for all lands in Little River. TMDLs state how much pollutant a water body can accept and still meet water quality standards.

A public meeting was held in the spring of 2000 to introduce the process to the public. Additional public meetings, coordinated by DEQ, will be held to review and gain public input.

Additional information regarding water quality can be found at www.waterquality.deq.state.or.us and www.epa.gov or by contacting the local DEQ office.

Soil Restoration Study

The Umpqua National Forest, in cooperation with the Forest Service Silvicultural Research Laboratory in Redding, California, is implementing a soil restoration study in the Little River Adaptive Management Area. Two methods of restoring compacted soils are being tested. This study will evaluate the effectiveness of such treatments by assessing planted seedling growth in treated and untreated study plots.

Since the early 1950's, large areas of the forest were clearcut with ground-based tractor harvest methods. Much of this harvest was concentrated on gentle terrain with fine-textured soils, resulting in widespread soil compaction and topsoil displacement. These impacts have caused increased runoff to streams and reductions in forest growth. In many areas, compaction is still apparent after 50 years. The second-growth forests are now available for management activity. There are concerns over the cumulative impacts of multiple entries.

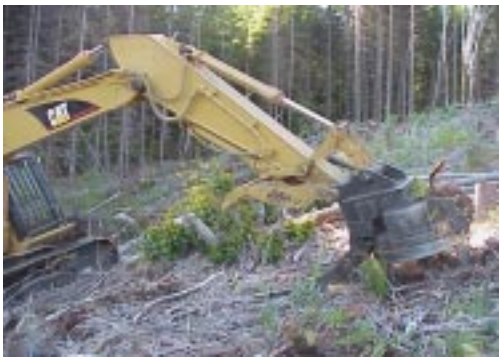
This long-term study was initiated to determine if compacted soils can be restored through active management techniques. The restoration techniques include use of a winged-subsoiler (developed by Diamond Lake Ranger District), and a VH-mulcher™ (site-prep tool used in British Columbia and elsewhere), both fitted to an excavator.

A subsoiling attachment is pulled through the soil by an excavator.

Six experimental study blocks were clearcut in 1999. Each block has 4 treatments:

1) Subsoiling with a winged ripper attached to an excavator
2) Soil cultivation with a VH-mulcher™ attached to an excavator
3) No Treatment (no soil restoration applied)
4) Control (no soil restoration applied and no harvest equipment allowed on plot during the 1999 clearcut).

The soil restoration was done to treatments 1 and 2 in the summer of 2000. Treatment plots 1, 2, and 3 were all logged the same way in 1999. The growth of planted seedlings in treatments 1 and 2 will be compared to seedling growth in treatment 3. Treatment 4 was logged differently than the others. During logging in 1999, no ground-based harvesting occurred in treatment 4. The growth of planted seedlings in treatment 4 will be compared to that in treatment 3. This will determine if additional soil compaction occurred in treatment 3, adding to the soil compaction that already existed from the prior logging. This aspect of the study will assess the effectiveness of current soil protection measures used during logging.



The VH-mulcher™, attached to an excavator, spot cultivates a 4-foot wide patch of soil in individual planting sites.

The study will periodically measure soil conditions and tree growth over the next 15-20 years to determine the feasibility and effectiveness of soil restoration treatments. This will add to other knowledge gained in our AMA on how to properly manage regional lands for long-term objectives. Robert Powers, of the Silvicultural Research Laboratory, will eventually publish the study in a scientific research journal.

Umpqua National Forest Restoration Business Plan

The Umpqua National Forest has an ecosystem restoration strategy in place called the Watershed Restoration Business Plan. Click on this link to view the Business Plan **www.fs.fed.us/r6/umpqua/nat_res/restoration/restoration.html**. The Business Plan lays out a 10-year strategy for implementing a $40,000,000 investment to restore the diversity of forest and stream habitats. The Plan guides the strategic development and funding of an integrated ecosystem restoration program. Road maintenance, fire management, forest management, and watershed resources (fisheries, wildlife, soil, water, and vegetation) are coordinated around a common mission.

Little River is among the top four watersheds for priority restoration under the Business Plan. Little River is a priority because of its diverse fish stocks, its adaptive management land allocation from the Northwest Forest Plan, and the opportunities that exist for cooperative restoration. Little River has an intermingled ownership pattern with BLM and National Forest system lands mixed with a significant amount of private industrial timber lands and smaller private parcels. Numerous on-going partnerships are in effect in the Little River Adaptive Management Area (listed in Appendix C of the Business Plan) that can help leverage restoration funding and build awareness of watershed processes among landowners and public land constituents.